

Claims

- [c1] A method for operating a radiation source, said method comprising:
providing a radiation source;
providing a detector; and
operating the radiation source and the detector such that the detector receives a substantially homogenous noise distribution.
- [c2] A method in accordance with Claim 1 further comprising operating the radiation source such that at least one of an inverted-cone beam geometry and a non-inverted cone beam geometry is received by the detector.
- [c3] A method in accordance with Claim 1 wherein said providing a radiation source comprises providing at least one of a line radiation source and a two-dimensional radiation source.
- [c4] A method in accordance with Claim 1 further comprising installing a filter between the radiation source and an object of interest such that an x-ray flux delivered to a plurality of regions in a field of view is approximately homogeneous.
- [c5] A method in accordance with Claim 1 further comprising modulating a radiation source current such that the radiation source current near an edge of the radiation source is greater than the radiation current at a center of the radiation source.
- [c6] A method in accordance with Claim 1 further comprising modulating a dwell time of an electron beam emitted from the radiation source such that a dwell time at an X-ray spot near an edge of a field of view is greater than the dwell time at an X-ray spot near a center of the field of view.
- [c7] A method in accordance with Claim 1 further comprising modifying a sampling distance between a plurality of x-ray spots such that the spots near an edge of the radiation source are spaced closer than the spots near a center of the radiation source.
- [c8] A method for operating a radiation source on a scanning imaging system,

wherein said imaging system comprises a radiation source, a detector, and a filter between said radiation source and said detector, said method comprising: operating the radiation source such that at least one of an inverted-cone beam geometry and a non-inverted cone beam geometry is received by the detector; modulating the radiation source current such that the radiation source current near an edge of the radiation source is greater than the radiation current at a center of the radiation source; and modulating a dwell time of an electron beam emitted from the radiation source such that a dwell time at an X-ray spot near an edge of the field of view is greater than the dwell time at an x-ray spot near the center of the field of view.

- [c9] A method in accordance with Claim 8 wherein said operating the radiation source such that at least one of an inverted-cone beam geometry and a non-inverted cone beam geometry is received by the detector comprises operating at least one of a line radiation source and a two-dimensional radiation source.
- [c10] A method in accordance with Claim 8 further comprising modifying a sampling distance between a plurality of X-ray spots such that the spots near an edge of the radiation source are spaced closer than the spots near a center of the radiation source such that the detector receives a substantially homogenous noise distribution.
- [c11] A computer operating a radiation source installed on a scanning imaging system, wherein said imaging system comprises a radiation source and a detector, said computer programmed to operate the radiation source and the detector such that the detector receives a substantially homogenous noise distribution.
- [c12] A computer in accordance with Claim 11 wherein to operate the radiation source, said computer further configured to operate at least one of a line radiation source and a two-dimensional radiation source.
- [c13] A computer in accordance with Claim 11 further programmed to operate the radiation source such that at least one of an inverted-cone beam geometry and a non-inverted cone beam geometry is received by the detector.

- [c14] A computer in accordance with Claim 11 further programmed to operate the imaging system, wherein said imaging system further comprises a filter installed between the radiation source and an object of interest such that an x-ray flux delivered to a plurality of regions in a field of view is approximately homogeneous.
- [c15] A computer in accordance with Claim 11 further programmed to modulate a radiation source current such that the radiation source current near an edge of the radiation source is greater than the radiation current at a center of the radiation source.
- [c16] A computer in accordance with Claim 11 further programmed to modulate a dwell time of an electron beam emitted from the radiation source such that a dwell time at an X-ray spot near an edge of a field of view is greater than the dwell time at an X-ray spot near the center of the field of view.
- [c17] A computer in accordance with Claim 11 further programmed to modify a sampling distance between a plurality of x-ray spots such that the spots near an edge of the radiation source are spaced closer than the spots near a center of the radiation source.
- [c18] A computed tomographic (CT) imaging system for operating a radiation source, said CT system comprising:
a radiation source;
a detector array; and
a computer coupled to said detector array and said radiation source, said computer configured to operate said radiation source such that at least one of an inverted-cone beam geometry and a non-inverted cone beam geometry is received by said detector.
- [c19] A CT system in accordance with Claim 18, wherein said radiation source comprises at least one of a line radiation source and a two-dimensional radiation source.
- [c20] A CT system in accordance with Claim 18, wherein said CT imaging system further comprises a filter installed between the radiation source and an object

interest such that an x-ray flux delivered to a plurality of regions in a field of view is approximately homogeneous.

[c21] A CT system in accordance with Claim 18, wherein said computer further configured to modulate a radiation source current such that the radiation source current near an edge of said radiation source is greater than the radiation current at a center of said radiation source.

[c22] A CT system in accordance with Claim 18, wherein said computer further configured to modulate a dwell time of an electron beam emitted from said radiation source such that a dwell time at an X-ray spot near an edge of a field of view is greater than a dwell time at an X-ray spot near the center of the field of view.

[c23] A CT system in accordance with Claim 18, wherein said computer further configured to modify a sampling distance between a plurality of x-ray spots such that the spots near an edge of said radiation source are spaced closer than the spots near a center of said radiation source.

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